**(VRE) Against Tigecycline: The T.E.S.T. Program**

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*Background:* Tigecycline (TIG), a member of a new class of antimicrobials (glycylcyclines), has been shown to have potent expanded broad spectrum activity against most commonly encountered species responsible for community and hospital acquired infections. The T.E.S.T. program determined the in vitro activity of tigecycline compared to amoxicillin-clavulanic acid, piperacillin-tazobactam, levofloxacin, ceftriaxone, linezolid (LZD), minocycline, vancomycin (VAN), ampicillin (AM), penicillin, and imipenem against VRE collected from hospitals globally throughout 2004–2007.

*Methods:* 742 VRE (110 *Enterococcus faecalis*, 632 *E. faecium*) clinical isolates were identified to the species level at each participating site and confirmed by the central laboratory. Minimum Inhibitory Concentrations (MICs) were determined by the local laboratory using supplied broth microdilution panels and interpreted according to CLSI guidelines with tigecycline susceptible defined as $\leq$0.25 mcg/mL.

*Results:* %S of all VRE to TIG, LZD, and MIN were 100, 96.4, and 72.2, respectively. For *E. faecalis* strains, the three most active drugs were TIG (100%), LZD (100%), and AM (100%). For *E. faecium*, the three most active drugs were TIG (100%), LZD (95.7%), and MIN (74.4%). There were significant differences in VRE rates between North America (*E. faecalis* 4.7%, *E. faecium* 65.8%), Europe (*E. faecalis* 1.3%, *E. faecium* 16.4%), and Asia (*E.faecalis* 0%, *E.faecium* 30%).

*Conclusions:* TIG exhibited outstanding activity against VRE, inhibiting 100% of strains with MICs $\leq$0.25 mcg/ml ($MIC_{90}$ = 0.06), surpassing LZD as the most active drug in this study. The exceptionally broad spectrum of TIG, which includes many other multi-resistant gram-positive and gram-negative bacteria in addition to VRE, will make it a very attractive addition to hospital formularies.

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**Production of Recombinant Porcine Lysozyme and Its Lytic Activity Against Bacillus**

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Recently, the abuse of the antibiotics induces the appearance of the drug resistant bacteria Therefore, it is necessary to develop an alternative reagent that takes the place of the antibiotics. Porcine lysozyme (PLY), a natural anti-bacillus protein, is one of the promising candidate. Therefore, it is expected to mass-produce PLY with the genetic engi-codon of Asp102 was substituted (gac◊gat). This modified PLY gene (length: 484 bp) was synthesized with 9 short DNA oligomers by SPR method and PCR extension, and expressed in insect cell line (expresSF+) using baculovirus expression system. The efficiency of recombinant PLY production was high (more than 50 mg/L) in the expresSF+ cell culture fluid. The product was purified and analyzed its molecular weight by mass spectrometry and N-terminal sequence by peptide sequencer. The results proved that the expressed recombinant PLY was the same as the natural type. When having compared it with human lysozyme and chicken egg white lysozyme, PLY showed stronger lysing activity against M. lysodeikticus than human and chicken egg white lysozyme in the high salt or high pH conditions. This research was financed by the Japan Livestock Technology Association.

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**Predominance of Staphylococcal Cassette Chromosome Mec (SCCmec) Type V Among Methicillin-Resistant *Staphylococcus aureus* (MRSA) in a Tertiary Hospital in Malaysia**

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*Background:* Methicillin-resistant *Staphylococcus aureus* (MRSA) continues to be an ever-ending threat worldwide as nosocomial or community-acquired (CA) pathogen. SCCmec being the key component for methicillin resistance differentiates nosocomial and community strains based on their types. Despite of the increasing prevalence of MRSA in Malaysia, SCCmec types of local strains are unknown. The aim of the study is to investigate the SCCmec types of local isolates and identify the predominant type in hospital setting.

*Methods:* Thirty-eight non duplicate MRSA isolates representing various clinical presentations isolated from a tertiary hospital during Oct 2006 to February 2007 was subjected to SCCmec typing. Reference strains for SCCmec types I, II, III, IV, V were included.

*Results:* Of 38 MRSA isolates 27 (71%) were found to carry SCCmec type V with two (7.4%) hyper-virulent PVL producers, and 11 (29%) carried SCCmec type III. None of other SCCmec types were observed. No significant relationship was found between the SCCmec types and clinical specimen as both types were mostly isolated from pus, blood and tracheal aspirate. However, two isolates from urine samples carried SCCmec type V. 86.8% MRSA were found to be multiple drug resistant displaying resistances to more than 3 non-beta lactam drugs. No particular phenotypic antibiotic susceptible pattern was seen for either SCCmec type. Molecular characterization showed the replacement of nosocomial SCCmec types with CA-MRSA SCCmec types in hospital.

*Conclusion:* SCCmec type V has become the predominant type in clinical setting. However a nationwide study is needed to know the actual scenario. The predominance of CA-MRSA in hospital shows that it has become a successful nosocomial pathogen which will have significant impact on the control of MRSA. Well-designed, community based stud-